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ABSTRACT

In the 1980s, American educators face a leadership challenge in a society which is in the process of converting from an industrial to an information based economy. The Educational Computer Consortium of Ohio has provided a network for teachers to learn about and share computer uses and public domain software. In the spring of 1980, the Department of Teacher Education at Miami University (Ohio) developed four computer literacy goals: (1) all faculty in the Teacher Education Department would become computer literate; (2) all faculty would implement computer applications into disciplines they taught; (3) all teacher education students would be computer literate when they graduated; and (4) the department of teacher education would develop a microcomputer center to serve its preservice and inservice students and teachers. Computer awareness activities provided the first steps toward meeting these goals. As implementation of the department goals progressed, a series of planned staff development seminars were held. Other additional computer activities occurred during this phase, including the development of a microcomputer course for upper level and graduate teacher education students. By the fall of 1983, the department of education faculty had incorporated computer activities into methods coursework, increased their own knowledge of computer usage, developed a software library, and provided leadership and equipment in the development of a divisional microcomputer laboratory. (JMK)

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A MODEL FOR COMPUTER LITERACY STAFF DEVELOPMENT IN TEACHER EDUCATION

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Both Drs. Walla and Wendel are experienced educators and administrators. Their expertise involves reading, curriculum and instruction, adult education, and computing. They played the major roles in the events described within this paper.

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In the 1980's American Educators face an enormously exciting leadership challenge in a society which is in the process of converting from an industrial to an information-based economy. The staggering fact that by the end of the century 90 percent of the American work force will be employed in an automated office leads educators to quickly consider how the generation of children in today's schools will be prepared to meet that phenomena. Immediately this consideration leads to the question of who will prepare the preparers, the current and future teachers who are as enamoured with the promises of the computers as the rest of American society?

Ohio Schools, Colleges, and Universities are responding to the challenge. The Educational Computer Consortium of Ohio has provided a network for teachers to learn about and share computer uses and public domain software. Boards of Education, Parent-Teacher Organizations and State Agencies have contributed dollars for hardware and software. A vital leadership role has been assumed by Ohio Universities, especially Schools and Colleges of Education, who realize that they provide the implementation link for both preservice and inservice teachers. It is this faculty that felt the pressure to act quickly to assist educators in their efforts to maximize the advantages of this new technological tool.

For example, in the Spring of 1980 the Department of Teacher Education at Miami University developed four computer literacy goals as a commitment to the national computer literacy movement. These goals included:

1. All faculty in the Department of Teacher Education will become computer literate.
2. All faculty will implement computer applications into the disciplines they teach.
3. All Teacher Education students will be computer literate when they graduate.
4. The Department of Teacher Education will develop a microcomputer center to serve both its pre-service and inservice students and teachers.

Computer awareness activities provided the first steps toward meeting these goals. Educational consultants who had previous experience with mainframe terminals or microcomputers were invited to conduct faculty awareness seminars. A computer literacy unit was developed and taught to fourth graders in the Laboratory School. Six microcomputers in the fourth grade classroom for four weeks provided a preview of future directions for students, interested faculty, parents, and college student observers. Faculty attended professional meetings with organizations such as AEDS (Association for Educational Data Systems) and ADCIS (Association for the Development of Computer Instruction in Schools). They invited commercial courseware vendors to provide software which they reviewed and tested with children and teachers, and then contributed informational articles

to professional journals. Microcomputer hardware and software were given priority for department funding, providing faculty access to equipment for their own literacy needs and moving toward the development of a microcomputer center.

As implementation of the department goals progressed, a series of planned staff development seminars were held to augment individual efforts being made through coursework and self study. These seminars included the topics of:

(1) beginning programming.

(2) the state of the art of microcomputing in Ohio Schools,

(3) quality software demonstration and guidelines for selection,

(4) use of the computer in college classrooms and laboratories,

(5) word processing with a microcomputer.

These seminars were conducted by faculty within the department and from other departments on the Miami University campus. The State of the Art session was presented by the director of the Educational Computer Consortium of Ohio.

Several additional computer activities occured during this phase. A faculty member participated in the "Computer Uses in Teacher Education Conference" held at Ohio University. The department also developed a 3 credit hour microcomputer course

for upper level and graduate teacher education students. The course includes basic programming, computer uses in the classroom and software selection. Inservice awareness sessions, and cooperatively developed courses were provided for schools in the Southwestern Ohio area. Faculty members sought grant contracts from outside sources to supplement educational budgets. College for Kids and College for Yough programs were developed by the facutly to provide microcomputer access for young people. Department administrators converted their data management tasks of scheduling, budgeting, and record keeping to microcomputer programs. Software acquisition, review and publication continued as the faculty believes it is the professional educator's role to keep the developers informed about the quality of their software and its compatibility with school curriculum and objectives. Faculty designed summer and weekend workshops to provide teachers an opportunity to learn about computing.

In the fall of 1982 Miami University President Paul Pearson declared Miami's commitment in the Age of Computers to prepare each student adequately, stressing literacy for all Miami graduates by 1986. This announcement strengthened the Department of Teacher Education goals, now two years underway. The faculty increased the speed of the Department's effort. Systemmatically in the Fall of 1983, they incorporated computer activities into methods coursework, increased their own knowledge of computer

usage, developed a software library, and provided leadership and equipment in the development of a Divisional Microcomputer Laboratory. A Teacher Education faculty member was assigned as halftime director of the Divisional Computer Laboratory and one faculty member was given load reduction time to be the Departmental Computer Coordinator. Additional hardware and software continued as a major priority, with the goal of one microcomputer for each faculty member within the next five years.

An Ad Hoc Advisory Committee for Computer Literacy held two meetings with the Divisional Dean to consider the university guidelines and suggest implementation strategies. Departmental representatives consulted with the curriculum committee and then met to devise a scope and sequence strategy for developing computer literacy. A three tiered model evolved. The first level is an introduction to computers course. The second level is a computer applications course. The third level involves special computer courses for applications specific to a major or departmental need. Both undergraduate and graduate students will be served by this model. The Department of Teacher Education, however continues to hold that applications in all teacher education courses are the best vehicle for achieving computer literacy for teacher educators.

As the mid-eighties approach, teacher educators at Miami are emphasizing the changing role of the teacher with the

availability of the microcomputer. Research has shown that students learn more, or learn the same amount faster using the computer, that the computer is an effective tutor, that students find the computer to be motivational and allow them to move at their own pace, and that teacher management is more efficient using a computer. (Bracey, 1982) This knowledge is being shared with students ir methods classes as well as ways a microcomputer can be used as a teaching resource for problem solving, developmental and remedial instruction, word processing, creativity, writing with word processing, motivation, skill development through structured reinforcement, and simulation. Sample quality courseware in each subject area is being demonstrated. A computer literate faculty incorporates computers in coursework objectives and activities, providing a model for future teachers to emulate.

Additional reserach is underway at Miami to determine the effects of the microcomputer on learning, the effects of programming on problem solving skills and teaching efficiency. A touch panel is being tested with three and four year old children in the Divisional Child Studies Laboratory. Educational software is being developed. Collaborative efforts with public schools are providing research, development and training opportunities.

How did this effort succeed so quickly when the challenge was so demanding? The microcomputer was an explosion of new

dimensions in teacher education and the unique and insatiable desire to learn the new technology was present in the faculty. A supportive administration provided necessary resources, planning, and inservice leadership. Faculty looked at research, listened to futurists, sensed the societal demand and went to work. Although realizing that they are shooting at a moving target, creative educators are providing leadership in computer literacy through teaching, research, and staff development. Placing technology high on the pricrity list as an educational process now vital for survival, Miami University Teacher Educators are now preparing teachers for new opportuinties in new environments. In the process they may have once again renewed their commitment to education by realizing that the most effective way to learn something new is by teaching it to others. Perhaps the strength of the computer literacy movement in Teacher Education at Miami University can be most attributed to the tremendous amount of informal networking which took place among faculty, administration and students. They learned together as they taught together, each helping the other to fill in the gaps of newly acquired knowledge about the use of the microcomputer in teacher education.

When education set forth on the historic journey toward full computerization in the decade of the 1980's, most teacher educators were beginners. We've come a long way, but the challenge and promise of the microcomputer in education is still great. By the time this appears in print, hopefully the goals

of the Department of Teacher Education at Miami University will have been met. It is time to set new goals. According to Dr. Henry Jay Becher, director of the Center for the Social Organiaztion of Schools, there are over 250,000 computers in use in American Schools. We've only just begun to tap their effectiveness. Ohio Teacher Educators must continue to lead this effort.

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